METHODS: This retrospective cohort analysis utilized claims from a large national health plan. Included were members aged 65-89 years, with continuous enrollment between Jan-2008 and Dec-2009. Patients with T2DM (cases) were propensity matched 1:1 with non-diabetes patients (controls) by age, gender, ethnicity, geographic location, low-income status, and plan type. To assess burden of illness, all-cause health care costs for 2009 were calculated as the sum of all medical and pharmacy claims (based on ICD-9-CM and GPI codes), and were compared descriptively for cases and controls. In addition, costs directly attributable to diabetes were evaluated for the case cohort (based on ICD-9-CM 250.xx and prescriptions for anti-hyperglycemic agents). **RESULTS:** The analysis included 179,203 cases and matched controls. There were no significant differences at baseline between cohorts with respect to matched variables, however, cases had a significantly higher mean (SD) Deyo-Charlson Comorbidity Index compared to controls (2.47 versus 0.77 respectively; $p<0.0001$). Mean (SD) all-cause healthcare costs per patient per year were significantly higher for cases versus controls for in-patient hospitalization ($1,120±$4,425 vs. $712±$3,230), outpatient visits ($5,475±$15,640 vs. $3,620±$11,149), office visits ($1,666±$3,652 vs. $1,358±$3,492), ER visits ($288±$868 vs. $219±$759), pharmacy costs ($2,195±$2,807 vs. $1,342±$2,438) and total healthcare costs ($10,406±19,959 vs. $6,993±$14,836) respectively, all $p<0.0001$. The mean diabetes attributable total healthcare cost for the case cohort was $3,588±$9,270 per patient per year. **CONCLUSIONS:** All cause healthcare costs were significantly higher for patients with T2DM than for matched controls, highlighting the serious burden of illness in this Medicare Advantage population.

PDB65

ECONOMIC BURDEN OF CUSHING'S DISEASE: A POPULATION ANALYSIS OF DIRECT MEDICAL COSTS AND UTILIZATION

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OBJECTIVES: Cushing's disease (CD), a rare pituitary disorder, is associated with significant morbidity and mortality, but the economic impact is unknown. This study assessed the annual healthcare costs and utilization of CD patients. **METHODS:** Administrative claims from 2004-2008 of a large population with commercial or Medicare-supplemental insurance in the US were analyzed. CD patients were those with medical claims for Cushing's syndrome (ICD-9-CM: 255.0) and either benign pituitary adenoma (227.3) or hypophysectomy (07.6). Each CD patient was age- and gender-matched to four patients with non-functioning pituitary adenoma (NFPA) and ten population controls (PC). NFPA was identified as benign pituitary adenoma without Cushing's syndrome, acromegaly (253.0) or hyperprolactinemia (253.1). Comorbid conditions and annual direct healthcare costs were compared between cohorts by calendar year. **RESULTS:** The study identified 877 CD patients (79% female; average age 43 years). Hypertension (43% [CD] vs. 24% [NFPA] vs. 17% [PC]), diabetes (29% vs. 13% vs. 7%) and hyperlipidemia (27% vs. 21% vs. 14%) were the most common comorbidities in CD patients and more prevalent than in NFPA patients and PC (all $p<0.05$). CD patients had significantly higher total healthcare costs than NFPA patients and PC in 2004-2008; the difference between cohorts increased over time. In 2008, average healthcare costs were $26,440 among CD patients, compared to $13,708 in NFPA patients and $5,954 in PC (both $p<0.05$). Approximately one-third of total costs among CD patients were attributable to CD-related services. CD patients were more likely to have inpatient admissions (20.7% vs. 15.8% [NFPA] vs. 7.1% [PC], both $p<0.01$), had more frequent outpatient hospital visits (6.5 vs. 3.8 vs. 1.8, both $p<0.01$), and received more medications than NFPA patients and PC (means: 10.0 vs. 7.4 vs. 4.7, both $p<0.01$). **CONCLUSIONS:** CD patients had more comorbidities than NFPA patients and PC, and incurred significantly higher annual healthcare costs.

PDB66

COSTS OF THE PHARMACEUTICAL PROGRAM TO TREAT T2DM PATIENTS FROM HIPERDIA: GOVERNMENT HEALTH CARE PROGRAM FOR DIABETES AND HYPERTENSION POPULATION UNDER THE BRAZILIAN PUBLIC HEALTH CARE SYSTEM

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OBJECTIVES: Diabetes is a chronic disease that requires continuing care to reduce the risk of long-term complications. In this sense it is important to maintain a good therapeutic arsenal providing good treatment to mantain type 2 diabetes (T2DM) and hypertension under control, preventing complications. We decided to assess the costs of the HIPERDIA program with medication provided by the government for a future cost-effectiveness research. **METHODS:** HIPERDIA is a program for monitoring hypertensive and diabetic patients under care in the public healthcare system. Based on that database, we searched the number of patients under treatment from 2005 to 2010 and also the number of doses of the drugs (glibenclamide and metformin) available to control T2DM (Datasus/Hiperdia). Also, we looked at the Brazilian price database (Banco de Preços) the minimum and the maximum price paid by the government for those drugs to calculate their total costs in the program. **RESULTS:** From 2002 to 2010, we found a total of 1,067,754 patients using glibenclamide 5 mg and 662,519 patients under metformin 850 mg, however it was not clear the number of patients taking both. The average dailydosewas 1.79 tablet for glibenclamide and 1.74 for metformin. In the price database from the government, we found that the average price paid for glibenclamide was R$ 0.008/daily unit (ranging from R$ 0.007 to 0.04) and for metformin R$ 0.026/daily unit (ranging from R$ 0.023 to 0.098). From January 2009 to August 2010 the total cost of this program with these 2 drugs reached R$ 1,567,145 and our projections showed that, since 2002, the government spent about R$ 9 million. **CONCLUSIONS:** Generics generated a huge price pressure for those drugs in Brazil and with this scenario it seems to be difficult to predict the plans to update the drug list to provide more effective treatments for this population.

PDB67

IT PROCESSES IN CLINICAL PRACTICES FOR DIABETES PATIENTS TYPE II

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OBJECTIVES: This project presents an analysis of IT processes on variations of prescribing patterns for patients diagnosed with diabetes type II, following the first study on electronic billing and its association with diabetic drug prescribing (Huttin/Wong,2010). **METHODS:** A sample of 610 patients is extracted from the CDC physician survey.IT processes include electronic medical records (EMR), with or without patient demographics, computerized orders for Rx, tests, lab results, notes from nurses and physicians, public health reporting. Several hierarchical clustering methods are tested to identify various stages of IT processes and the impact of IT is analyzed with non parametric tests (analysis of variance) on prescribing patterns. **RESULTS:** Two HB clustering methods (average method and ward) identify three clusters representing different stages of IT processes: physicians using no IT at all (80.76%) and two levels of IT operations in practices (cluster 2: 17.33 %; cluster 3: 1.91%). The dendogram with the AL method presents clearer separation than the dendogram with the ward method. Variations in drug prescribing is significant between clusters, using the scoring savage test: −21 for cluster 1, 16.85 for cluster 2, 4.4 for cluster 3 (P value 0.01). The analysis on new drugs does not show different prescribing patterns; however, the number of injectables (insulin) per patient is significantly higher in cluster 2 than 1 (0.51 verus 0.39). Different patterns of IT processes are also identified within cluster 2 and other clustering methods among grouping and similarity computations (e.g. Shusaku et als,2004)are tested to analyze the propagation of IT processes among the practices of this dataset (generalisation tested with a similarity matrix). **CONCLUSIONS:** This project can be used for analysis and management of IT processes inside clinical systems and control for their effects on physician prescribing behaviours.Results confirm that in addition to ebilling, different patterns of IT processes have an impact on treatment regimens (especially affecting insulin or insulin/OAD combinations). This can complement Koro et als study (2004).

PDB68

ASSESSING LIFEYEARS SAVED FROM 2000 TO 2010 IN CHINA DUE TO NOVO NORDISK INSULIN

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OBJECTIVES: Insulin and other diabetes treatments are generally considered cost effective treatment options as they reduce the incidence of complications, increase life expectancy and improve quality of life. This paper quantifies in a new model the life years saved in the Chinese diabetic population between 2000 and 2010 due to sales of Novo Nordisk insulin. **METHODS:** The CORE diabetes model was used to make projections of long-term survival rates for people with type 2 diabetes treated with defined therapies; modern insulin monotherapy (MI Mono), Modern Insulin combined with Oral Anti Diabetics (OAD), human insulin combined with OAD (HI OAD) and human insulin monotherapy (HI Mono). In the human insulin scenarios, the base case cohort characteristics were based on the Chinese DiabCare data for 1998 (mean age 56.71 years, 58% male, duration of diabetes 7 years, HbA1c 8.81%). The modern insulin scenarios (introduced around 2005) are based on cohort characteristics observed in the Chinese PRESENT study (mean age 57.21 years, 51% male, duration of diabetes 6 years, HbA1c 7.93%). Treatment effects in the four interventions modelled; MI Mono, MI OAD, HI OAD and HI Mono relied on published sources (HbA1c; −1%, −1.82%, −1.2% and 0.7% respectively). The annual size of the population treated was calculated using annual Novo Nordisk sales and average daily insulin dosage as observed in the DiabCare China study. This process was then repeated for each year from 2000 to 2010 making it possible to cumulate the number of life years saved. **RESULTS:** The undiscounted life expectancy for the 4 different baseline cohorts modelled in the CORE diabetes model was improved by 2.9, 2.7, 2.2, 1.7 for MI OAD, MI Mono, HI OAD, HI Mono respectively. **CONCLUSIONS:** The cumulated undiscounted life years saved between 2000 and 2010 was estimated at 136.198.66 due to treatment with Novo Nordisk insulin in China.

PDB69

EXENATIDE (BID) AND LIRAGLUTIDE (QD) TREATMENT PATTERNS AMONG TYPE-2 DIABETES PATIENTS IN GERMANY

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OBJECTIVES: Exenatide and liraglutide are the two therapeutic options in the GLP-1 anti-diabetic medication class, to improve glycemic control in adults with type 2 diabetes (T2D). This study evaluated patient and prescriber characteristics, treatment patterns, average daily dose (ADD), and glycemic control of patients initiating GLP-1 medications in Germany. **METHODS:** The LifeLink™ EMR-EU database contains records for over 15 million German patients and 3,000 physicians. The cohort included patients who initiated exenatide or liraglutide during the index period (01/01/2009 - 04/30/2010). Patients also had ≥180 days history, pre-index; 90-540 days follow-up, post-index; and a T2D diagnosis (ICD-10 E10-E14), pre-index. Univariate tests were conducted at $\alpha=.05$. **RESULTS:** The cohort included 692 patients (exenatide 292, liraglutide 400): mean (SD) age 59 (±10) years, 59% male. Diabetologists prescribed liraglutide more frequently than exenatide (65% vs. 35%) compared to non-diabetologists (51% vs. 49 %). Choice of GLP-1 was not associated with pa-